

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/510,947
Source: PCT
Date Processed by STIC: 11-8-04

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 11/08/2004

PATENT APPLICATION: US/10/510,947

TIME: 12:29:50

Input Set : A:\UPN-O2811USA.txt

Output Set: N:\CRF4\11082004\J510947.raw

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3 <110> APPLICANT: The Trustees of the University of Pennsylvania
4     Wilson, James M.
5     Medina, Maria Fe C.
6     Kobinger, Gary
8 <120> TITLE OF INVENTION: Chimeric Ebola Virus Envelopes and Uses Therefor
10 <130> FILE REFERENCE: UPN-O2811PCT
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/510,947
C--> 12 <141> CURRENT FILING DATE: 2004-10-28
12 <150> PRIOR APPLICATION NUMBER: US 60/376,480
13 <151> PRIOR FILING DATE: 2002-04-30
15 <150> PRIOR APPLICATION NUMBER: US 60/385,704
16 <151> PRIOR FILING DATE: 2002-06-04
18 <150> PRIOR APPLICATION NUMBER: US 60/427,752
19 <151> PRIOR FILING DATE: 2002-11-20
21 <160> NUMBER OF SEQ ID NOS: 67
23 <170> SOFTWARE: PatentIn version 3.2
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 676
27 <212> TYPE: PRT
28 <213> ORGANISM: Ebola virus
30 <400> SEQUENCE: 1
32 Met Gly Val Thr Gly Ile Leu Gln Leu Pro Arg Asp Arg Phe Lys Arg
33 1                    5                    10                    15
36 Thr Ser Phe Phe Leu Trp Val Ile Ile Leu Phe Gln Arg Thr Phe Ser
37                20                    25                    30
40 Ile Pro Leu Gly Val Ile His Asn Ser Thr Leu Gln Val Ser Asp Val
41                35                    40                    45
44 Asp Lys Leu Val Cys Arg Asp Lys Leu Ser Ser Thr Asn Gln Leu Arg
45                50                    55                    60
48 Ser Val Gly Leu Asn Leu Glu Gly Asn Gly Val Ala Thr Asp Val Pro
49 65                70                    75                    80
52 Ser Ala Thr Lys Arg Trp Gly Phe Arg Ser Gly Val Pro Pro Lys Val
53                85                    90                    95
56 Val Asn Tyr Glu Ala Gly Glu Trp Ala Glu Asn Cys Tyr Asn Leu Glu
57                100                   105                   110
60 Ile Lys Lys Pro Asp Gly Ser Glu Cys Leu Pro Ala Ala Pro Asp Gly
61                115                   120                   125
64 Ile Arg Gly Phe Pro Arg Cys Arg Tyr Val His Lys Val Ser Gly Thr
65                130                   135                   140
68 Gly Pro Cys Ala Gly Asp Phe Ala Phe His Lys Glu Gly Ala Phe Phe
69 145                150                   155                   160
72 Leu Tyr Asp Arg Leu Ala Ser Thr Val Ile Tyr Arg Gly Thr Thr Phe
73                165                   170                   175

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76 Ala Glu Gly Val Val Ala Phe Leu Ile Leu Pro Gln Ala Lys Lys Asp
77          180          185          190
80 Phe Phe Ser Ser His Pro Leu Arg Glu Pro Val Asn Ala Thr Glu Asp
81          195          200          205
84 Pro Ser Ser Gly Tyr Tyr Ser Thr Thr Ile Arg Tyr Gln Ala Thr Gly
85          210          215          220
88 Phe Gly Thr Asn Glu Thr Glu Tyr Leu Phe Glu Val Asp Asn Leu Thr
89 225          230          235          240
92 Tyr Val Gln Leu Glu Ser Arg Phe Thr Pro Gln Phe Leu Leu Gln Leu
93          245          250          255
96 Asn Glu Thr Ile Tyr Thr Ser Gly Lys Arg Ser Asn Thr Thr Gly Lys
97          260          265          270
100 Leu Ile Trp Lys Val Asn Pro Glu Ile Asp Thr Thr Ile Gly Glu Trp
101          275          280          285
104 Ala Phe Trp Glu Thr Lys Lys Asn Leu Thr Arg Lys Ile Arg Ser Glu
105          290          295          300
108 Glu Leu Ser Phe Thr Val Val Ser Asn Gly Ala Lys Asn Ile Ser Gly
109 305          310          315          320
112 Gln Ser Pro Ala Arg Thr Ser Ser Asp Pro Gly Thr Asn Thr Thr Thr
113          325          330          335
116 Glu Asp His Lys Ile Met Ala Ser Glu Asn Ser Ser Ala Met Val Gln
117          340          345          350
120 Val His Ser Gln Gly Arg Glu Ala Ala Val Ser His Leu Thr Thr Leu
121          355          360          365
124 Ala Thr Ile Ser Thr Ser Pro Gln Ser Leu Thr Thr Lys Pro Gly Pro
125          370          375          380
128 Asp Asn Ser Thr His Asn Thr Pro Val Tyr Lys Leu Asp Ile Ser Glu
129 385          390          395          400
132 Ala Thr Gln Val Glu Gln His His Arg Arg Thr Asp Asn Asp Ser Thr
133          405          410          415
136 Ala Ser Asp Thr Pro Ser Ala Thr Thr Ala Ala Gly Pro Pro Lys Ala
137          420          425          430
140 Glu Asn Thr Asn Thr Ser Lys Ser Thr Asp Phe Leu Asp Pro Ala Thr
141          435          440          445
144 Thr Thr Ser Pro Gln Asn His Ser Glu Thr Ala Gly Asn Asn Asn Thr
145          450          455          460
148 His His Gln Asp Thr Gly Glu Glu Ser Ala Ser Ser Gly Lys Leu Gly
149 465          470          475          480
152 Leu Ile Thr Asn Thr Ile Ala Gly Val Ala Gly Leu Ile Thr Gly Gly
153          485          490          495
156 Arg Arg Thr Arg Arg Glu Ala Ile Val Asn Ala Gln Pro Lys Cys Asn
157          500          505          510
160 Pro Asn Leu His Tyr Trp Thr Thr Gln Asp Glu Gly Ala Ala Ile Gly
161          515          520          525
164 Leu Ala Trp Ile Pro Tyr Phe Gly Pro Ala Ala Glu Gly Ile Tyr Ile
165          530          535          540
168 Glu Gly Leu Met His Asn Gln Asp Gly Leu Ile Cys Gly Leu Arg Gln
169 545          550          555          560
172 Leu Ala Asn Glu Thr Thr Gln Ala Leu Gln Leu Phe Leu Arg Ala Thr

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173          565          570          575
176 Thr Glu Leu Arg Thr Phe Ser Ile Leu Asn Arg Lys Ala Ile Asp Phe
177          580          585          590
180 Leu Leu Gln Arg Trp Gly Gly Thr Cys His Ile Leu Gly Pro Asp Cys
181          595          600          605
184 Cys Ile Glu Pro His Asp Trp Thr Lys Asn Ile Thr Asp Lys Ile Asp
185          610          615          620
188 Gln Ile Ile His Asp Phe Val Asp Lys Thr Leu Pro Asp Gln Gly Asp
189 625          630          635          640
192 Asn Asp Asn Trp Trp Thr Gly Trp Arg Gln Trp Ile Pro Ala Gly Ile
193          645          650          655
196 Gly Val Thr Gly Val Ile Ile Ala Val Ile Ala Leu Phe Cys Ile Cys
197          660          665          670
200 Lys Phe Val Phe
201          675
204 <210> SEQ ID NO: 2
205 <211> LENGTH: 364
206 <212> TYPE: PRT
207 <213> ORGANISM: Ebola virus
209 <400> SEQUENCE: 2
211 Met Gly Val Thr Gly Ile Leu Gln Leu Pro Arg Asp Arg Phe Lys Arg
212 1          5          10          15
215 Thr Ser Phe Phe Leu Trp Val Ile Ile Leu Phe Gln Arg Thr Phe Ser
216          20          25          30
219 Ile Pro Leu Gly Val Ile His Asn Ser Thr Leu Gln Val Ser Asp Val
220          35          40          45
223 Asp Lys Leu Val Cys Arg Asp Lys Leu Ser Ser Thr Asn Gln Leu Arg
224          50          55          60
227 Ser Val Gly Leu Asn Leu Glu Gly Asn Gly Val Ala Thr Asp Val Pro
228 65          70          75          80
231 Ser Ala Thr Lys Arg Trp Gly Phe Arg Ser Gly Val Pro Pro Lys Val
232          85          90          95
235 Val Asn Tyr Glu Ala Gly Glu Trp Ala Glu Asn Cys Tyr Asn Leu Glu
236          100          105          110
239 Ile Lys Lys Pro Asp Gly Ser Glu Cys Leu Pro Ala Ala Pro Asp Gly
240          115          120          125
243 Ile Arg Gly Phe Pro Arg Cys Arg Tyr Val His Lys Val Ser Gly Thr
244          130          135          140
247 Gly Pro Cys Ala Gly Asp Phe Ala Phe His Lys Glu Gly Ala Phe Phe
248 145          150          155          160
251 Leu Tyr Asp Arg Leu Ala Ser Thr Val Ile Tyr Arg Gly Thr Thr Phe
252          165          170          175
255 Ala Glu Gly Val Val Ala Phe Leu Ile Leu Pro Gln Ala Lys Lys Asp
256          180          185          190
259 Phe Phe Ser Ser His Pro Leu Arg Glu Pro Val Asn Ala Thr Glu Asp
260          195          200          205
263 Pro Ser Ser Gly Tyr Tyr Ser Thr Thr Ile Arg Tyr Gln Ala Thr Gly
264          210          215          220
267 Phe Gly Thr Asn Glu Thr Glu Tyr Leu Phe Glu Val Asp Asn Leu Thr

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268 225          230          235          240
271 Tyr Val Gln Leu Glu Ser Arg Phe Thr Pro Gln Phe Leu Leu Gln Leu
272          245          250          255
275 Asn Glu Thr Ile Tyr Thr Ser Gly Lys Arg Ser Asn Thr Thr Gly Lys
276          260          265          270
279 Leu Ile Trp Lys Val Asn Pro Glu Ile Asp Thr Thr Ile Gly Glu Trp
280          275          280          285
283 Ala Phe Trp Glu Thr Lys Lys Thr Ser Leu Glu Lys Phe Ala Val Lys
284          290          295          300
287 Ser Cys Leu Ser Gln Leu Tyr Gln Thr Glu Pro Lys Thr Ser Val Val
288 305          310          315          320
291 Arg Val Arg Arg Glu Leu Leu Pro Thr Gln Gly Pro Thr Gln Gln Leu
292          325          330          335
295 Lys Thr Thr Lys Ser Trp Leu Gln Lys Ile Pro Leu Gln Trp Phe Lys
296          340          345          350
299 Cys Thr Val Lys Glu Gly Lys Leu Gln Cys Arg Ile
300          355          360
303 <210> SEQ ID NO: 3
304 <211> LENGTH: 511
305 <212> TYPE: PRT
306 <213> ORGANISM: Vesicular stomatitis virus
308 <400> SEQUENCE: 3
310 Met Lys Cys Leu Leu Tyr Leu Ala Phe Leu Phe Ile Gly Val Asn Cys
311 1          5          10          15
314 Lys Phe Thr Ile Val Phe Pro His Asn Gln Lys Gly Asn Trp Lys Asn
315          20          25          30
318 Val Pro Ser Asn Tyr His Tyr Cys Pro Ser Ser Ser Asp Leu Asn Trp
319          35          40          45
322 His Asn Asp Leu Ile Gly Thr Ala Leu Gln Val Lys Met Pro Lys Ser
323 50          55          60
326 His Lys Ala Ile Gln Ala Asp Gly Trp Met Cys His Ala Ser Lys Trp
327 65          70          75          80
330 Val Thr Thr Cys Asp Phe Arg Trp Tyr Gly Pro Lys Tyr Ile Thr His
331          85          90          95
334 Ser Ile Arg Ser Phe Thr Pro Ser Val Glu Gln Cys Lys Glu Ser Ile
335          100          105          110
338 Glu Gln Thr Lys Gln Gly Thr Trp Leu Asn Pro Gly Phe Pro Pro Gln
339          115          120          125
342 Ser Cys Gly Tyr Ala Thr Val Thr Asp Ala Glu Ala Val Ile Val Gln
343          130          135          140
346 Val Thr Pro His His Val Leu Val Asp Glu Tyr Thr Gly Glu Trp Val
347 145          150          155          160
350 Asp Ser Gln Phe Ile Asn Gly Lys Cys Ser Asn Tyr Ile Cys Pro Thr
351          165          170          175
354 Val His Asn Ser Thr Thr Trp His Ser Asp Tyr Lys Val Lys Gly Leu
355          180          185          190
358 Cys Asp Ser Asn Leu Ile Ser Met Asp Ile Thr Phe Phe Ser Glu Asp
359          195          200          205
362 Gly Glu Leu Ser Ser Leu Gly Lys Glu Gly Thr Gly Phe Arg Ser Asn

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Input Set : A:\UPN-O2811USA.txt

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363      210      215      220
366 Tyr Phe Ala Tyr Glu Thr Gly Gly Lys Ala Cys Lys Met Gln Tyr Cys
367 225      230      235      240
370 Lys His Trp Gly Val Arg Leu Pro Ser Gly Val Trp Phe Glu Met Ala
371      245      250      255
374 Asp Lys Asp Leu Phe Ala Ala Ala Arg Phe Pro Glu Cys Pro Glu Gly
375      260      265      270
378 Ser Ser Ile Ser Ala Pro Ser Gln Thr Ser Val Asp Val Ser Leu Ile
379      275      280      285
382 Gln Asp Val Glu Arg Ile Leu Asp Tyr Ser Leu Cys Gln Glu Thr Trp
383      290      295      300
386 Ser Lys Ile Arg Ala Gly Leu Pro Ile Ser Pro Val Asp Leu Ser Tyr
387 305      310      315      320
390 Leu Ala Pro Lys Asn Pro Gly Thr Gly Pro Ala Phe Thr Ile Ile Asn
391      325      330      335
394 Gly Thr Leu Lys Tyr Phe Glu Thr Arg Tyr Ile Arg Val Asp Ile Ala
395      340      345      350
398 Ala Pro Ile Leu Ser Arg Met Val Gly Met Ile Ser Gly Thr Thr Thr
399      355      360      365
402 Glu Arg Glu Leu Trp Asp Asp Trp Ala Pro Tyr Glu Asp Val Glu Ile
403      370      375      380
406 Gly Pro Asn Gly Val Leu Arg Thr Ser Ser Gly Tyr Lys Phe Pro Leu
407 385      390      395      400
410 Tyr Met Ile Gly His Gly Met Leu Asp Ser Asp Leu His Leu Ser Ser
411      405      410      415
414 Lys Ala Gln Val Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln
415      420      425      430
418 Leu Pro Asp Asp Glu Ser Leu Phe Gly Asp Thr Gly Leu Ser Lys
419      435      440      445
422 Asn Pro Ile Glu Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser
423      450      455      460
426 Ile Ala Ser Phe Phe Phe Ile Ile Gly Leu Ile Ile Gly Leu Phe Leu
427 465      470      475      480
430 Val Leu Arg Val Gly Ile His Leu Cys Ile Lys Leu Lys His Thr Lys
431      485      490      495
434 Lys Arg Gln Ile Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys
435      500      505      510
438 <210> SEQ ID NO: 4
439 <211> LENGTH: 147
440 <212> TYPE: DNA
441 <213> ORGANISM: Vesicular stomatitis virus
443 <400> SEQUENCE: 4
444 agctctattg cctctttttt ctttatcata gggttaatca ttggactatt cttggttctc      60
446 cgagttggta tccatctttg cattaaatta aagcacacca agaaaagaca gatttataca      120
448 gacatagaga tgaaccgact tggaag      147
451 <210> SEQ ID NO: 5
452 <211> LENGTH: 126
453 <212> TYPE: DNA
454 <213> ORGANISM: Vesicular stomatitis virus

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RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 11/08/2004

PATENT APPLICATION: US/10/510,947

TIME: 12:29:51

Input Set : A:\UPN-O2811USA.txt

Output Set: N:\CRF4\11082004\J510947.raw

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34

Seq#:35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58

Seq#:59,60,61,62,63,64,65,66,67

VERIFICATION SUMMARY

DATE: 11/08/2004

PATENT APPLICATION: US/10/510,947

TIME: 12:29:51

Input Set : A:\UPN-02811USA.txt

Output Set: N:\CRF4\11082004\J510947.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date